DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-009244
Date Inspected: 25-Sep-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Jose Salazar			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-2: 9/25/09
a111-2 Forging to a110-2 Base Plate
QA Inspector noticed that welder #O6, Mr. Tim O'Brian and #J6, Mr. Craig Jacobson, were in-process of grinding and performing weld clean-up, on the PJP and fillet welds stiffeners to a111-2 forging and a107/b106/ab106 stiffeners. QA Inspector spoke with lead QC Inspector Mike Gregson and Mr. Gregson explained that the blending and weld clean-up was being performed on the weld transitions and weld spatter/undersize welds were being repaired, which were previously marked by QC Inspector Jose Salazar. Mr. Gregson also explained that the completed fillet and PJP welds on the radial stiffeners, which were found to be visually acceptable per AWS D1.5 and contract requirements, were in process of 100% magnetic particle inspection by QC Inspector Jose Salazar. QA Inspector noted that the in-process visual and magnetic particle testing by OIW QC Inspectors appeared to be in compliance with AWS D1.5 and contract requirements. See attached picture below.

Hinge-K Pipe Beam Assembly 102A-3: 9/25/09
a111-3 Forging to a110-3 Base Plate
QA Inspector witnessed OIW production personell perform grinding on the previously completed weld repair

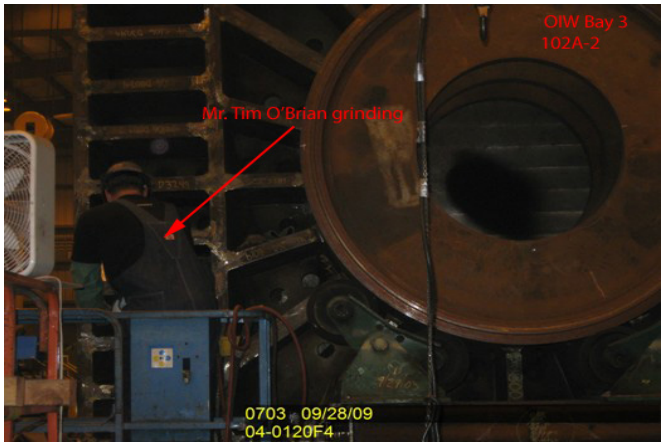
(WRR #2244-28). QA Inspector noted that this WRR #2244-28 had been previously completed by welder #J6, Mr. Craig Jacobson and the completed base metal welds were in-process of being ground flush. QA Inspector noted that 100% visual and magnetic particle testing will be performed by OIW QC personnel, after a minimum 48hrs. cooling time, per AWS D1.5 and the applicable welding procedure specification (WPS 3048). See attached picture below.

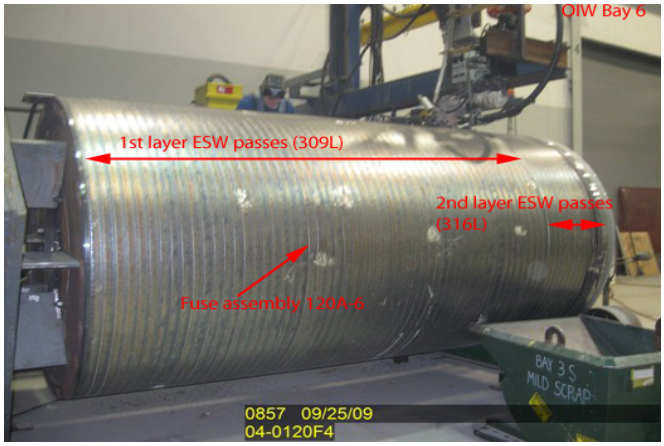
Hinge-K Pipe Beam Assembly 102A-4: 9/25/09
a111-4 Forging to a110-4 Base Plate
QA Inspector randomly witnessed OIW Lead, Mr. Troy Smith and Mr. Randy Kleeman were in-process of fitting the a109 Post Tension Cap plate into position. Mr. Troy Smith previously explained to QA Inspector that once the a109 Cap plate was in-position and fit, a series of threaded bolts would be placed in the existing bolt holes and tightened, to eliminate the possibility of warping and distortion of the a109 Cap plate, during the FCAW tacking. Note: QA Inspector noted that the a109 Post Tension Cap plate had been fit-up, later in the work shift and a series of threaded bolts had been placed and tightened at random locations, as referenced above, to possibly eliminate the a109 plate distortion during the FCAW tacking. QA Inspector later spoke with QC Inspector Jose Salazar and Mr. Salazar explained that the mill to bear contact surface, between the radial stiffeners and a109 Post Tension Cap Plate, had been verified. Mr. Salazar explained that a mirror and a feeler gauge had been utilized, to verify these contact points at all accessible locations (through the existing drilled holes) and approximately 100% mill to bear contact was noted by Mr. Salazar, in accordance with AWS D1.5 and contract requirements. QA Inspector verified that the mill to bear contact surface, between the a109 Post Tension Cap plate and radial stiffeners, was in compliance with AWS D1.5 and contract requirements, utilizing a .5mm feeler gauge and noted there was approximately 100% contact, through the pre existing drilled holes in the a109 Post Tension Cap plate. See attached pictures below.

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)
Hinge-K Pipe Beam Fuse Assembly 120A-6: 9/25/09
a124-14 Half Fuse to a124-2 Half Fuse
QA Inspector noticed that the second ESW stainless steel overlay passes were in-process, on this fuse assembly 120A-6. QA Inspector witnessed welder #F17, Mr. Igor Frolov performing electro slag welding (ESW) on the second layer welding passes, (approximately 10% complete), in the flat position, utilizing Soudokay brand Soudotape 316L stainless steel consumable strip. QA Inspector noted the first layer passes had previously been completed utilizing the 309L consumable strip and the remaining second (in-process) & third layer passes would be completed utilizing Soudokay brand Soudotape 316L stainless steel consumable strip, per contract requirements. QA Inspector randomly noticed QC Inspector's Mike Gregson and Jose Salazar were present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that welding amps were recorded as 1200 amps/25.2 volts, travel speed at 269mm/min. and a pre-heat temperature recorded at 70 degrees Fahrenheit (21 C). QA Inspector verified in-process welding parameters of 1200 amps/25.2 volts and recorded pre-heat temperatures of approximately 70 degrees Fahrenheit (21 C). QA Inspector verified Mr. Igor Frolov was currently qualified for this welding process/position and and noted that Mr. Igor Frolov appeared to be in compliance with the applicable approved welding procedure specification (WPS 7003). See attached picture below.

Material, Equipment, and Labor Tracking
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project.

The QA Inspector observed at Oregon Iron Works: 5 OIW production personnel and 2 QC Inspectors.





Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

WELDING INSPECTION REPORT

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Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer